BIAXIALLY ORIENTED POLYESTER FILM AND LAMINATES THEREOF WITH COPPER

ABSTRACT

Disclosed are biaxially oriented polyester film produced from a polyester comprising:

(1) diacid residues comprising at least 90 mole percent of terephthalic acid residues, naphthalenedicarboylic acid residues or combinations thereof; and

(2) diol residues comprising at least 90 mole percent of 1,4-cyclohexanedimethanol residues; wherein the polyester comprises a total of 100 mole percent diacid residues and a total of 100 mole percent diol residues;

wherein a film of the polyester is stretched or oriented at stretch ratios and stretch temperatures that satisfy the equation $(27*R) - (1.3*(T-Tg)) \geq 27$, where T is the average of the machine and transverse direction stretch temperatures in degrees Celsius, Tg is the glass transition temperature of the polymer film in degrees Celsius and R is the average of the machine and transverse direction stretch ratios and the stretched film is subsequently heat-set at an actual film temperature of from 260°C to Tm, wherein Tm is the melting point of the polyester as measured by differential scanning calorimetry (DSC), while maintaining the dimensions of the stretched film.